Dangerous futures

How our pensions fuel hunger

December 2013

About the World Development Movement

The World Development Movement (WDM) campaigns for a world without poverty and injustice. We work in solidarity with activists around the world to tackle the causes of poverty. We research and promote positive alternatives which put the rights of poor communities before the interests of the powerful. Our network of local groups keeps global justice on the agenda in towns and cities around the UK.

World Development Movement
66 Offley Road, London SW9 0LS
+44 20 7820 4900 • wdm@wdm.org.uk
www.wdm.org.uk

With thanks to Amarjeet Kaur, Nikki Ray, Vaidehee Sachdev and Brett Scott.

Contents

Executive summary

Institutional investors such as pension funds have been putting vast sums of money into food and other commodity markets, placing huge, long-term bets on rising prices. In doing so, they exert an upward pressure on food prices, pushing them beyond the reach of the poor, and increasing hunger and malnutrition.

This speculation is promoted and facilitated by investment banks such as Goldman Sachs and Barclays, which earlier this year announced that it was withdrawing from food speculation, although it continues to facilitate such practices by pension funds and other institutional investors.

Despite a widespread lack of transparency in pension funds' holdings, our research has shown how the pension funds of major employers such as BT and the railway industry are speculating on commodity prices. In total, we estimate that at least £1.5 billion of pension savings are used to speculate on food prices – £180 for every person in the UK contributing to a pension.

Regulation to limit speculation in the commodity markets is urgently needed and strong proposals are currently on the table in the EU. But with the UK government blocking agreement, there is a risk that ordinary people's retirement savings will continue to fund food speculation and fuel higher food prices.

Introduction

Since 2010, the World Development Movement (WDM) has been campaigning to highlight how speculation in the commodity derivative markets contributes to high and volatile prices for food and other commodities.

Our detailed reports on the subject have shown how financial speculation can affect real commodity prices, and there is now a broad consensus that excessive speculation does contribute to commodity price fluctuations. Indeed in June 2011 a joint report by the UN and OECD said “most researchers agree that high levels of speculative activity in futures markets may amplify price movements in the short term”.[1]

High food prices, such as those experienced during the global price spikes in 2007-08 and 2010-11, can have devastating impacts on the poor, especially those in developing countries where social safety nets are limited or non-existent. Those on low incomes are forced to skip meals, cut back on other essentials such as medicines and education for their children, or sell assets such as livestock in order to feed their families.

Short-term speculation versus long-term speculation

Much of the publicity around the issue of food speculation has focused on the role of major investment banks such as Barclays, Deutsche Bank and Goldman Sachs in the practice. Since our campaign began in 2010, a number of major banks have signalled reviews, suspensions or withdrawals from food speculation, although none have pulled out of the commodity markets entirely.

One such example is Barclays: in February 2013, the bank’s chief executive Antony Jenkins announced that the bank would “no longer trade agricultural commodities for speculative purposes”. However, later clarification revealed that the bank had not entirely withdrawn from facilitating food speculation, but rather simply stopped trading with hedge funds.[2] In a letter to WDM in March, a representative of Barclays confirmed that the bank continues to trade with institutional investors such as pension funds.

Barclays, in other words, only defines ‘speculation’ in a short-term sense. To Barclays, a hedge fund that makes quick bets on a market is speculating, but a pension fund that makes longer-term bets on the same market is ‘investing’. And when questioned at their AGM in April 2013, members of Barclays’ board reiterated this, claiming that dealing with institutional investors does not constitute speculation.

WDM disagrees. In this context, we consider that speculation is the buying or selling of financial instruments (in this case financial products based on commodity prices) for the purpose of financial gain, without any real world interest in the underlying thing that is being bet on. Institutional investors are not direct producers or users of wheat or oil, and their betting on the price changes of such commodities is a clear case of speculation.

A quick primer on pension funds

Barclays is right, however, to point out that pension funds operate in a different way to hedge funds. A hedge fund is the quintessential gambler, seeking maximum short-term profits and taking big risks in the process. A pension fund, on the other hand, has a much longer-term perspective. The ideal for pension fund managers is to create a low risk portfolio of different investments that allow them to obtain decent returns over a long period of time.

In order to help them minimise their risk of losses whilst attempting to maximise returns, institutional investors don't put all their eggs in one basket. They spread the pension fund's money across a range of financial assets and markets. They draw up an investment strategy, the core of which will be an 'asset allocation', which is basically a plan that sets out how much of their money will be invested in different 'asset classes'. For example, they may want a portfolio of investments including:

- Shares of ownership in companies found on the stock market
- Bonds (debt) of governments and companies
- Physical property
- 'Alternative investments', which includes investments into hedge funds, private equity funds, and infrastructure projects (and as we shall see, commodities)

Once they've decided on this broad plan, they often outsource the management of their money to external fund management companies – such as BlackRock and Fidelity – who may take responsibility for executing the investment strategy on their behalf.

The basic principle of investing in a broad range of companies via financial instruments like shares and bonds has been widely used by pension fund managers for many years. But the idea of pension funds 'investing' in commodities is a new concept. Betting on whether the price of a food commodity is going to go up would certainly not seem like investment to the fund managers of the 70s and 80s. Rather, that would have been seen as something that gamblers in commodity futures would do, and not appropriate for those responsible for looking after people's retirement savings pensioners' money. So how did this change?

Investment banks peddling commodity 'investments'

Commodity futures are short-term bets on commodity markets that can be used either for the process of 'hedging', or for speculation. Hedging occurs when real producers or users of physical commodities (for example commercial farmers or food manufacturers) use futures contracts to protect themselves from adverse price changes by locking in the price at which they can buy or sell a commodity at a future date. Think of it as 'using a bet to protect yourself'.

On the other hand, you can also use a bet for pure speculation, and indeed, speculators like hedge funds have long dabbled in these futures markets simply to make a profit. For example, if a speculator thinks that a particular commodity is going to be in short supply, they may buy up futures contracts, hoping that their value will rise. To make these choices, speculators may use fundamental analysis – in-depth study of commodity supply and demand – or they may use 'technical analysis', looking at the price patterns created by other traders to read the sentiment in markets, and often using computerised trading programs to exploit that.

The average pension fund, however, is massive and has to juggle a huge number of investments. Unlike hedge fund traders, the pension fund managers do not have the time or inclination to be sitting in a futures market trying to buy and sell three-month futures contracts. Why would you when your investment outlook is many years into the future?

But outlook of the investment managers that many pension funds outsource the management of their funds to tends to be much more short-term. And salespeople at investment banks are masters at trying to sell new investment products to big pension funds. In the 90s, following deregulation in the US, banks like Goldman Sachs started marketing 'commodity index funds' for pension funds to buy into. Basically this means that instead of someone having to go directly into a futures market to buy up the contracts, they can do so *indirectly* via the commodity index fund. It's a managed conduit, smoothly transferring the returns from commodity futures to whoever puts money into the fund, without them having to go to the trouble of buying commodity futures themselves. This suddenly made 'investment' into commodity futures a viable undertaking for a pension fund manager, who could just give Goldman Sachs the money and let them do the fancy stuff in the background.

Case Study: BT Pension Fund

The BT Pension Scheme is one of the largest pension funds in the UK. The fund puts 2.5 per cent of its money into commodities markets. This might sound like a small percentage, but the overall fund size is almost £39 billion, which means it ends up putting £960 million into commodities, much of this via products created from derivatives that are sold to it by investment banks.

For example, the BT Pension Scheme uses commodity index swaps to gain exposure to commodities. Effectively what it is doing is entering into a bet with an investment bank, which in turn bets in the commodities futures markets. It's a bit like you buying a packaged holiday from a tour provider. You might not directly book the hotels and buses, but it's your money being used to do it. Similarly, the BT fund isn't buying up futures directly itself, but is doing so indirectly via an investment bank product.

Why do they do it?

Big 'institutional investors' like pension funds usually have large amounts of money and a long-term outlook, seeking to preserve wealth or generate a stable return over a long period of time. Thus, when a salesperson from Barclays is trying to sell a commodity investment product to them, the salesperson will talk about how commodities are a good way to 'diversify' the fund's portfolio, making it less reliant on investments such as shares, bonds and property. For example, to sell commodity investments, Goldman Sachs and others used[3] an influential 2006 academic paper by Gorton and Rouwenhorst which argued that commodity prices were excellent for diversifying investments.[4]

Despite recent research suggesting that big investors allocating money to commodities actually end up having more volatile portfolios[5], financial institutions that market commodity investment products continue to promote them in this way. For example, JP Morgan claims on its website that "Commodities have historically provided an excellent diversification benefit when combined with the traditional asset classes."[6]

There have been a number of more specific drivers of increased pension fund involvement in the commodity derivative markets over the past couple of decades. For example, there was a sharp increase of money entering the markets around 2007, as investors withdrew capital from the sub-prime mortgage markets and sought alternative places for their cash. And, following the financial crisis and with western economies flat-lining, institutional investors have been looking for more certain ways to generate returns. To put this in the words of finance-sector consultants Mercer, "dual focus on risk management and return generation has led pension plans to allocate assets to an increasing range of alternative asset classes [such as commodities]... We expect this trend to continue..."[7]

Is this really investment, or just speculation?

Barclays claims that institutional investors like pension funds are not speculating in commodity markets, but investing. However, it is highly misleading to characterise these activities as genuine 'investment'. Investment is the process of putting money into building or improving productive assets from which future economic value can be derived. For example, you might put money into building greenhouses on a farm, which enables it to produce food for more of the year, generating more income. Or you might use money to purchase equipment (such as an oil press) to process food so that it can be sold for a higher price. Those are examples of investment.

Placing a bet on the price of food – whether a short-term or a long-term bet – contributes absolutely nothing to the productive potential of the economy. Indeed, betting on rising food prices is the opposite of investment. True investment would entail increasing agricultural production or making it more efficient (so that it takes less resources to produce the same amount), which could reduce food prices in the long term.

Case Study: Leicestershire County Council Pension Fund

The underlying callousness of commodity speculation is frequently couched in euphemistic language. Take for example, the language used by Leicestershire County Council Pension Fund, which invests in a fund that includes commodity derivatives: "Commodities are an attractive asset class for the Fund as there are constraints on the ability to produce them and the outlook for demand, particularly from the developing world, is strong."

Leicestershire County Council Pension Fund appears to be revelling in the fact that the world may fail to increase commodity production to match demand, which would especially hit developing countries. It sees this as an 'attractive' opportunity. It is, to put it bluntly, positioning itself to make money whilst others suffer. This investment philosophy is not befitting an organisation that is supposed to be concerned about the long-term wellbeing of people.

Commodity index funds: a growing trend

Commodity index funds are one major way for pension funds to gain exposure to commodities markets without having to engage in costly and fiddly direct trading in the market. One crucially important element of this so-called commodity 'investment' is that these funds are often 'long only'. This is jargon for saying that they only bet on *increases* in commodities prices, not on decreases. In practice, what this means is that they are constructed by *buying* short-term commodity futures contracts, which are constantly replaced with new contracts as they expire in order to maintain the same position in the market. This 'rolling' of contracts is simply *repeated short-term speculation* used to give the illusion of a 'long-term investment'.

These index funds can speculate across a range of commodities, including energy commodities (such as oil and gas), metals and agricultural commodities.[8] There has been an enormous growth in index fund holdings in agricultural commodity markets, which have increased 26-fold from around $3 billion in 2003 to $80 billion in 2011, with index funds making up over 60 per cent of overall financial holdings in agricultural futures markets.[9] Recent innovations from the financial sector have also seen a wider range of products available to institutional investors, including commodity exchange traded funds (ETFs) and notes (ETNs).

Recent figures suggest that investors had a total of over $400 billion invested in commodities in April 2013[10], double the figure for 2007.[11] And while there are changes in commodity holdings from year to year, depending on global circumstances, the overall long-term trend is upwards. It's difficult to tell exactly how much of this goes specifically into *agricultural* commodity derivatives, but it's reasonable to assume the figure to be up to one-quarter. This is based on using the weightings of broad commodity indices as a proxy for how important different commodity types are, as illustrated in the table below.

% of index	S&P GSCI	Dow Jones UBS	Rogers	Thomson Reuters/ Jefferies CRB	Average
Agricultural (includes non-food e.g. cotton, coffee)	20.0	35.9	34.9	41.0	33.0
of which food	17.8	31.7	25.7	26.0	25.3
Other (energy, metals)	80.0	64.1	65.1	59.0	67.1

So what's the problem?

Markets are supposed to consist of buyers and sellers making informed choices about a particular product at a particular time, and the buyers and sellers are supposed to be able to change their minds. A short-term speculator like a hedge fund might actually behave like this, nipping in and out of markets, paying close attention to short-term changes in prices as they actively buy and sell commodity futures on a day-to-day basis – and when it occurs at high levels, exacerbating price fluctuations in the process. But pension funds investing via commodity index funds, in contrast, plough money into markets with little regard for short-term price dynamics. They are 'price insensitive', and for this reason, they are colloquially known in markets as 'dumb money', the big buyers who just arrive and buy anything at any price.

Imagine a village fruit market which has a buyer (from a local wealthy estate) who arrives each week with strict instructions to buy a tonne of oranges regardless of their price. This buyer would be price-insensitive, and would be a source of upward pressure on the rest of the market. Now imagine a fund like the BT Pension Scheme, indirectly dumping £960 million into commodity markets via index funds that constantly buy futures contracts regardless of what price they are. That's a structural form of upward price pressure on a commodity market.

The combination of their enormous size and their use of long-term passive trading strategies has led Bart Chilton of the Commodity Futures Trading Commission (CFTC), the US commodity regulator, to describe large institutional investors as "massive passives"[12]. The presence of these funds does not guarantee that the price always goes up in commodity markets, but it does create a source of 'buoyancy', a resistance to downward movements in price. As one advisor with a focus on agricultural commodities put it: "When the large speculative funds and index funds are buying more aggressively than the commercial hedgers are willing to sell, the market must go up until supply and demand get back into balance."[13] This is a big problem now, and will be even more concerning if more pension funds do this in the future.

Our research

It is estimated that pension funds are the largest category of investor in the world, holding over US$20 trillion in assets globally, higher than any other category including insurance funds, sovereign wealth funds and foundations.[14] In conducting this research, WDM focused on UK pension funds.

We took two approaches to the research. We initially investigated the sector from the top down, attempting to broadly work out how many pension funds put money into commodities, and what percentage of their portfolios they might held in commodities. In addition, we also investigated the UK's largest individual pension funds, attempting to find which have asset allocations that include commodities.

The big picture

There are varying estimates for the size of UK pension fund assets, but most recent figures (from December 2012) put them £1,729 billion,[i] up by approximately 8 per cent since 2011.[15] A figure reported in the Office of National Statistics' (ONS) Pension Trends report (though not calculated by ONS) puts the figure slightly higher at £2,041 billion (excluding Self Invested Personal Pensions – estimated at over £80 billion in 2010) in 2011.[16] We can extrapolate that another 8 per cent increase would put the figure roughly between £1,800 billion and £2,200 billion for 2012, or, taking an average, around £2,000 billion. But how much of that is in commodities?

A survey conducted by Mercer in 2012 indicated that 14.3 per cent of surveyed UK pension funds over the size of £2 billion put money into commodities, and allocated an average 2.8 per cent of their money to commodities.[17] It is not clear whether the funds included in the Mercer survey are representative of UK pension funds overall – meaning that these figures should be treated with caution – but in Mercer's survey, funds over £2 billion[ii] made up around 67 per cent of the total pension fund assets. Extrapolating this out to the broader UK pension fund market, we could estimate that such funds together control around £1,340 billion (67 per cent of £2,000 billion).

On this basis, we could estimate that funds worth around £190 billion (14.3 per cent of £1,340 billion) had investments in commodities, with around £5.4 billion (2.8 per cent of £190 billion) of UK pension holders' money invested in commodities. And this doesn't include all the smaller pension funds which make up the rest of the market, although Mercer indicates that smaller funds are less likely to put money into commodities.

The lack of hard data makes an exact estimate difficult, but a conservative estimate (including large funds and small funds) of pension fund money in commodities may be at least £6 billion. With 8.2m people in the UK currently saving in some kind of pension[18], this means that the average person with a pension bets around £731 on commodities – of which around a quarter (£182) is likely to be on food commodities (using the same proxy method described on page 9 to calculate this).

[i] US$ 2,736bn based on an exchange rate of US1=£0.632
[ii] €2.5bn based on an exchange rate of €1=£0.804

Individual pension funds

Our more in-depth investigative research into the largest individual pension funds found a number of funds with large commodity holdings. There are clear limitations to this research, because many funds do not allow access to their data, but it nevertheless clearly shows real world examples of pension fund commodity 'investment'. We used three methods to try and find out about pension funds' holdings in commodities.

Method 1: Published data

In May 2013, we examined the websites of the UK's 100 largest pension funds,[19] noting any that published details of holdings in commodities (these figures were checked and updated as appropriate in September 2013 prior to publication). Of these, the following funds stated they had part of their fund invested in commodities. Only some offered information on investment holdings, and from those we identified the following as having commodity holdings:

Pension fund name	Holdings
BT Pension Scheme	£960m in a range of commodities[20]
Railways Pension Scheme	£330m in futures exposure[21]
Barclays Bank UK Retirement Fund	£27.6m from UKRF Diversified Growth Fund[22] and £30.9m from UKRF Lifestyle Funds[23]
West Midlands Pension Fund	£202.7m[24]
London Pensions Fund Authority	£51.7m[25]
Lothian Pension Fund	£67.1m[26]
Leicestershire County Council Pension Fund	£72.5m[27]
Scottish and Newcastle Pension Fund	£114.4m[28]

WDM contacted each of these funds to ask about the type of investments they had in commodities (e.g. commodity derivatives, physical commodity holdings, or shares in commodity-producing companies). We asked them to disclose how they invested in commodities, and what commodities were covered by these investments. Where we did not receive a response, we have assumed that their holdings are via some form of commodity derivative investment product, since it is unusual for a pension fund to hold physical commodities, and shares in commodity-producing companies would normally be listed under 'equities'.

Further information was provided by the following funds:

Pension fund name	Additional information provided
West Midlands Pension Fund	"At 31 March 2013, the fund's total holdings in commodities were £188.6m, of which £58.2m was invested in agricultural commodities."
Lothian Pension Fund	"At 31 March 2013, Lothian Pension Fund had £21.0m invested in commodities. The whole of this amount was invested in a physical gold ETF." The figure of £67.1m published for the previous year comprised £46.2m in timber and £20.9m in gold.
Leicestershire County Council Pension Fund	"The fund's commodity investments relate to a holding in a pooled fund (Investec Global Commodities and Resources Fund) and three holdings in gold funds. The Investec holding accounts for the majority (£67.2m) of the fund's holdings." The Investec Fund is run by an ex-Goldman Sachs commodity derivatives salesman, and includes both holdings in commodity futures and in stocks of commodity companies. We estimate that £7.5m is in commodity derivatives, based on an 11.14 per cent allocation to alternative asset classes within the fund.[29]

Method 2: Freedom of Information requests

For the 21 pension funds in the top 100 run by or for public bodies that did not provide sufficient publicly available information, we submitted requests for information under the Freedom of Information Act. The responses received by the time of publication are summarised in the table below.

No commodity holdings	No direct commodity holdings[iii]	Commodity holdings	No response
Scottish Public Pension Agency for NHS and Teachers	West Yorkshire Pension Scheme	Teesside Pension Fund	University Superannuation Scheme
Greater Manchester Pension Fund	Merseyside Pension Fund		Royal Mail
Strathclyde Pension Fund	Nottinghamshire County Council Pension Fund		TfL
Tyne & Wear Pension Fund	Northern Ireland Local Government Officers Superannuation Fund		South Yorkshire Pension Fund
Kent County Council Superannuation Fund	Hampshire County Council Pension Fund		Lancashire County Pension Fund
	Cheshire Pension Fund		Bank of England Pension Fund
	Avon Pension Fund		Derbyshire County Council Pension Fund
			Staffordshire Pension Fund

Closer investigation revealed that the Teesside Pension fund puts money into the following products:

- £8.5m in the PowerShares DB Agriculture fund, based on agricultural futures
- £1.4m in ETFS Commodity Securities (Corn), which is based on corn futures
- £1.5m in ETFS Commodity Securities (Wheat), based on wheat futures[30]

[iii] Generally investment via shares in commodity-producing companies

Method 3: Requests for information

Finally, for the remaining top 20 pension funds (11 private funds where the information was not available online and the fund was not subject to requests under the Freedom of Information Act), we contacted them to ask whether they had any assets allocated to commodities, and if so, how much. Of the funds contacted, only two (BBC Pension Trust, and Shell Contributory Pension Fund) replied, in both cases to say that they did not have investments in commodities.

Estimated holdings in food commodities

Unless a fund has a specific policy not to invest in certain commodities or have given details of their allocations to different commodity types, we assume that the breakdown across different commodity classes roughly reflects the breakdown of the major commodity indexes, as described earlier. On average, food commodities constitute around one quarter of all commodities and three-quarters of agricultural commodities, which includes non-food commodities such as cotton (see table on page 9). We can therefore conclude that the likely amount contributed by the above funds to food speculation is as follows.

Pension fund name	Holdings in commodities (excluding specific non-food holdings where known)	Estimated allocation to food commodities
BT Pension Scheme	£960m	£240m
Railways Pension Scheme	£330m	£82m
Barclays Bank UK Retirement Fund	£58.6m	£15m
West Midlands Pension Fund	£58.2 (agricultural only)	£44m
London Pensions Fund Authority	£51.7m	£13m
Leicestershire County Council Pension Fund	£7.5m	£2m
Scottish and Newcastle Pension Fund	£114.5m	£29m
Teesside Pension Fund		£11m
Total (of those funds we know of)		**£436m**

The figures above are based almost exclusively on funds' self-published data (since the majority of the funds we contacted with questions about their allocations to commodities did not respond). While we did find data for allocations in other assets for the majority of the other funds, in many cases the figures were not sufficiently detailed to see whether the fund had any commodity assets (for example, where only an overall figure for 'alternative investments' was given). So where the data was not available on a fund's website or in their annual report, we were unable to determine whether or not they had any asset allocation in commodities.

Conclusion

The evidence is strong that commodity speculation by institutional investors such as pension funds is widespread. With pension automatic enrolment now being rolled-out in the UK and expected to result in around eight million more people paying into pensions[31], the amounts of money involved are only likely to increase.

It is clear that this type of speculation can and does distort food and other commodity prices. The view that 'investments' in commodity derivatives are a wise choice for institutional investors to hedge their portfolio risk is increasingly being brought into doubt. But unfortunately these products continue to be marketed to pension funds. This trend needs to be nipped in the bud to prevent increasingly volatile food prices exacerbating the global hunger crisis.

Regulation to limit speculation in the commodity markets – including by institutional investors - is urgently needed and strong proposals are currently on the table in the EU. But with the UK government blocking agreement, there is a risk that ordinary people's retirement savings will continue to fund food speculation and fuel rising food prices. In the meantime pension holders need to question their pension funds about their involvement in commodity speculation, and institutional investors must get out of the sector.

Endnotes

[1] UN and OECD (2011) Agricultural Outlook 2011-2010
[2] Onstad, E. (2013) Barclays halts agriculture trading with hedge funds. Reuters, 12 February 2013
[3] Lines, T. (2010). Speculation in food commodity markets. World Development Movement
[4] Gorton, G. and Rouwenhorst, K.G. (2005). Facts and fantasies about commodity futures. Wharton School, University of Pennsylvania.
[5] Lombardi, M., Ravazzolo, F. (2013) BIS working paper no 420. On the correlation between commodity and equity returns: implications for portfolio allocation. Bank of International Settlements
[6] Huamani, M. (2013) Investing in commodities: the search for diversification. JP Morgan
[7] Mercer (2012) Asset Allocation Survey - 2012
[8] Scott, B. (2011) Barclays PLC & Agricultural Commodity Derivatives. World Development Movement
[9] 2003 data from WDM's own calculations based on index fund data from De Schutter, O. (2010) Food Commodities Speculation and Food Price Crises. United Nations Special Rapporteur on the Right to Food. Index fund commodity weightings from Scott, B. (2011) Barclays PLC & Agricultural Commodity Derivatives. World Development Movement. 2011 data from Barclays Capital (2011) The Commodity Investor: Hold on… April 2011.
[10] Farchy, J. (2013) Investors flee from commodities at record pace. Financial Times, 19 July 2013
[11] T. Lane (2012) Financing commodity markets. Speech in Calgary, 25 September 2012, chart 2, cited in Vander Stichele, M. (2012) Challenges for regulators. SOMO
[12] http://www.secactions.com/do-the-markets-work-for-you-position-limits-massive-passives-cheetahs-and-culture/ accessed 02/12/13; http://www.hardassetsinvestor.com/videos/2534-bart-chilton-the-new-dynamic--massive-passives.html accessed 02/12/13
[13] http://hackettadvisors.com/See_how_it_works.asp accessed 02/12/13, cited in Vander Stichele, M. (2012) Challenges for regulators. SOMO
[14] The Economist (2008) Asset Backed insecurity. The Economist, 17 January 2008
[15] Towers Watson (2012) Global Pensions Assets Study 2012
[16] ONS (2013) Pension Trends – Chapter 9: Pension scheme funding and investment, 2013 edition
[17] Mercer (2012) Asset Allocation Survey - 2012.
[18] Cohen, N. (2013) Falling pension scheme numbers highlight need for auto-enrolment, Financial Times, 16 July 2013
[19] Professional Pensions (2010) *Top 100 Pension Schemes 2010*
[20] BT Pension Scheme (2012) Annual Report and Accounts 31 December 2012, p.40
[21] Railways Pension Scheme (2012) Annual Report and Audited Financial Statements 2012, p.49 and 61
[22] Calculated from figures found in Barclays (2012) UKRF Diversified Growth Fund, p.1
[23] Calculated from figures found in Barclays (2012) UKRF Lifestyle Funds, p.1 and 2
[24] West Midlands Pension Fund (2012) Annual Report & Accounts 2012, p.43=
[25] http://www.lpfa.org.uk/How-we-invest.aspx accessed on 02/12/13
[26] City of Edinburgh (2012) Lothian Pension Funds Annual Report 2011/12 - Unaudited, p.44
[27] Leicestershire County Council Pension Fund (2012) Annual Report, p.26
[28] Calculated from figures found in Heineken (2012) The Scottish & Newcastle Pension Plan Trustee Review 2011/2012, p.3
[29] http://www.morningstar.co.uk/uk/funds/snapshot/snapshot.aspx?id=F00000MY53&tab=4 accessed 02/12/13
[30] Teesside Pension Fund (2013) Monthly accounting report Teesside Pension Fund to 31 March 2013, p.51
[31] DWP (2013) Automatic enrolment evaluation report 2013